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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/868,331

06/18/2001

Yoshikuni Matsunaga

XA-9484

8913

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7590

10/04/2004

MILES & STOCKBRIDGE PC
1751 PINNACLE DRIVE
SUITE 500
MCLEAN, VA 22102-3833

EXAMINER

UBILES, MARIE C

ART UNIT

PAPER NUMBER

2642

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/868,331	Applicant(s) MATSUNAGA ET AL.	
	Examiner Marie C. Ubiles	Art Unit 2642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/18/01, 9/24/01</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "these functional sections" in lines 6 and 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5-8, 11-12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Brozovich et al. (US 5,661,434).

As for claim 1, Brozovich et al. discloses a mobile communications apparatus (or *multiple power amplifier circuit level...for use in a WLAN transceiver*)(See Col. 2, lines 42-45) having an antenna which transmits and received radio waves (See Col. 2, lines 47-49), an RF power amplifier which amplifies a power-modulated RF signal and feed

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the amplified signal to the antenna (See Col. 3, lines 1-14), a receiver section which processes an RF signal received by said antenna (as read on the use of *Transmit/Receive (T/R) switches 1, 10, 14*)(See Col. 2, lines 42-45); a control section which controls these functional sections (See Col. 2, lines 49-52), and a battery supply (or *power source*) which supplies a power voltage to these functional sections (See Claim 2, lines 53-56); said RF power amplifier comprising amplifying elements of multiple stage which amplify the RF signal (See Col. 3, lines 8-9); an input matching circuit (or *input matching network 29, 31*) which implements the impedance matching for the input (See Col. 3, lines 16-20), an inter-stage matching circuit (or *output matching circuit 30*) which implements impedance matching between said amplifying elements (See Col. 3, lines 20-23), and an output matching circuit (or *output matching circuit 32*) which has means of varying the state of impedance matching of the output in proportion to the level of the power voltage which is applied to the amplifying elements (See Col. 3, lines 31-38).

As for claim 2, it is inherent from an impedance matching circuit to possess a variable capacitance.

As for claims 6–8 and 12, Brozovich et al. discloses an amplifying element comprising an insulated-gate field-effect transistor, wherein insulated-gate field effect transistors are connected in parallel (See Col. 3, lines 37-42 and Fig. 2A, elements 26 and 28).

As for claims 5, 11 and 15, the Examiner takes Official Notice that the combination of an inverter and a varicap diode used in order to change the impedance

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in proportion to the level of power is well-known in the art; a varicap diode is operated reversed biased –hence the need for an inverter- and the capacitance value of the diode can be made to vary.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 3-4, 9-10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brozovich et al. (US 5,661,434)

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As for claims 3, 9 and 13; a MOS-type element's variable capacitance element is well-known, in the art amplifying circuits are commonly implemented using other types of transistors including vacuum tubes, bipolar transistors, gallium arsenide devices, MOSFETS and MESFETS; thus it would have been obvious to one of ordinary skill in the art to exchange the MESFET element, as taught by Brozovich et al., for a MOSFET (MOS-type element).

In regards to claims 4, 10 and 14, it is well-known in the art that a surface inverting layer may be induced in a MOS-type element.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abe et al. (US 6,118,989) teaches a high frequency variable gain amplifier device and wireless communications terminal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie C. Ubiles whose telephone number is (703) 305-0684. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (703) 305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marie C. Ubiles
September 28, 2004.

A handwritten signature in black ink, appearing to read "Bing Q. Bui", is written over a horizontal line.

BING Q. BUI
PRIMARY EXAMINER